

Claims

- [1] 1. A method of manufacturing a tank suitable for storing very cold cryogenic liquids, such as liquefied ethylene (LEG) or natural gas (LNG) or a corresponding medium, the basic form of the tank corresponding to a rectangular prism and being manufactured from aluminium or the like material, characterized in that the tank is produced at least mainly from prefabricated structure elements of few different types so that plane elements meant as shell elements are produced by mechanically extruding profile elements including a plane part and a stiffening part and which are welded to each other by their plane parts by using friction welding, and the plane elements produced thus are provided with longitudinal and/or transverse stiffeners produced by mechanically extruding profile elements which are welded to each other by using friction welding and that the plane elements having stiffeners are attached to each other and/or to separately produced edge and/or corner elements into self-supporting volume units having at least four sides.
- [2] 2. A method according to claim 1, characterized in that in order to form a tank of the desired size one or more volume units are chosen, the volume units being arranged one after the other and connected to each other.
- [3] 3. A method according to claim 1 or 2, characterized in that the prefabricated structure elements are precisely machined to the predetermined dimension and that the ends of the plane elements and the profiles are bevelled for producing a correct and precise welding groove, most preferably by machining with a shape cutter.
- [4] 4. A method according to any of the preceding claims, characterized in that the extruded profile elements of the plane elements are made symmetrical in relation to the normal plane of the plane part and that their stiffener part is T- or I-shaped in cross-section.
- [5] 5. A method according to any of the preceding claims, characterized in that the dimensions of the profile element in the cross-section plane are varied according to the planned location of the plane element in the ready tank.
- [6] 6. A method according to any of the preceding claims, characterized in that the edge and corner elements are made from rolled plate bent to the shape and dimensions of the desired radius.
- [7] 7. A method according to any of the preceding claims, characterized in that when attaching the volume units to each other a splash bulkhead produced from extruded profile by using friction welding is installed between them, the splash bulkhead comprising a number of openings connecting the adjacent volume

units.

- [8] 8. A method according to any of the preceding claims, characterized in that the plane element used in the shell construction and splash bulkheads of the volume unit is dimensioned so that it is typically about 16 x 16 metres.
- [9] 9. An aluminium tank or the like, suitable for storing LNG or the like medium to be stored in very low temperatures, the basic form of the tank corresponding to a rectangular prism, characterized in that the tank is produced at least mainly from prefabricated construction elements of few different types, the elements including plane elements (2) to be used as shell panels of the tank, the plane elements being produced by mechanically extruding aluminium profile elements (1) or the like, the profile elements including a plane part and (1a) and a stiffening part (1b) and which are welded by their plane parts (1a) to each other using friction welding, and the plane elements (2) produced thus are provided with longitudinal and/or transverse stiffeners (4) being produced by mechanically extruding aluminium profile elements (3) or the like, which are welded to each other by using friction welding, and that the plane elements (2) having stiffeners (4) produced thus are attached to each other and/or to separately produced edge (5) and/or corner elements (6) into self-supporting volume units (7) having at least four sides.
- [10] 10. A tank according to claim 9, characterized in that in order to form a tank of the desired size one or more volume units (7) are arranged one after the other and connected to each other.
- [11] 11. A tank according to claim 9 or 10, characterized in that the tank is formed from a number of prefabricated, self-supporting volume units (7) arranged one after the other, the volume units being separated from each other by a splash bulkhead (8).
- [12] 12. A tank according to any of claims 9 - 11, characterized in that the tank is provided with means known as such, such as a tube tower (9), for filling and emptying the tank.
- [13] 13. A tank according to any of claims 9 - 11, characterized in that the extruded profile elements (1) of the plane elements (2) are symmetrical in cross-section in relation to the normal plane of the plane part (1a) and that their stiffening part (1b) is T- or I-shaped in cross-section.